(d) extending said partially double stranded DNA to form double stranded heteroduplexes;

(e) amplifying the double stranded heteroduplexes to form a population of amplicons; and

(f) determining the nucleotide sequence of a portion of each amplicon so that polymorphic DNA sequences of the test DNA population are identified.

3. (Amended) The method of claim 2, wherein members of said reference DNA population are provided in a first cloning vector, and members of said test DNA population are provided in a second cloning vector, wherein

the first cloning vector has a first primer binding site, a second primer binding site, a third primer binding site, and a cloning site disposed between the second and third primer binding sites,

and the second cloning vector has a fourth primer binding site, a fifth primer binding site, and a cloning site disposed between the fourth primer binding site and the fifth primer binding site, wherein the fifth primer binding site has a nucleotide sequence identical to said third primer binding site, and the sequence of the fourth primer binding site is different from that of any of the other primer binding sites.

5. (Amended) The method of claim 3, wherein said single stranded DNA of said reference DNA population is generated by amplifying said members of said reference DNA population in a polymerase chain reaction, using a nuclease-resistant primer specific for said first primer binding site and a primer specific for said third primer binding site, to form an amplicon having a single strand with a nuclease-resistant 5' end, and digesting the amplicon with a 5'→3' exonuclease.